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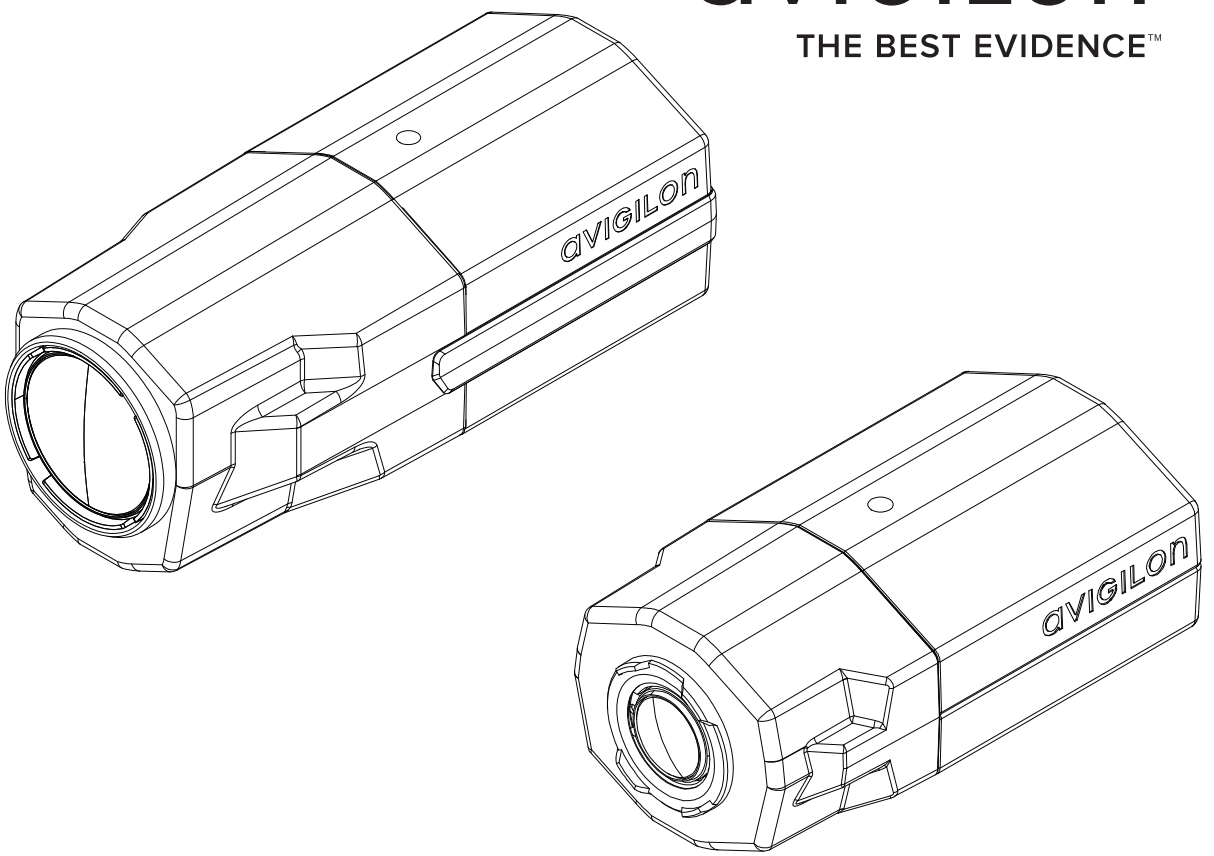

Installation Guide

Avigilon High Definition H.264 IP Camera Models:

1.0-H3-B1, 1.0-H3-B2, 1.0-H3-B3, 1.3L-H3-B2, 2.0-H3-B1, 2.0-H3-B2, 2.0-H3-B3, 3.0W-H3-B2, 3.0W-H3-B3, 5.0-H3-B2 and 5.0-H3-B3

920-0079A-Rev1

Important Safety Information

This manual provides installation and operation information and precautions for the use of this camera. Incorrect installation could cause an unexpected fault. Before installing this equipment read this manual carefully. Please provide this manual to the owner of the equipment for future use.

The Warning symbol indicates the presence of dangerous voltage within and outside the product enclosure that may constitute a risk of electric shock, serious injury or death to persons if proper precautions are not followed.

The Caution symbol alerts the user to the presence of hazards that may cause minor or moderate injury to persons, damage to property or damage to the product itself if proper precautions are not followed.

Warning — Failure to observe the following instructions may result in severe injury or death.

- Do not use near water or expose to dripping or splashing.
- Do not place objects filled with liquids above the device.
- Do not expose to rain or moisture.
- For indoor use only.
  If used outdoors, an approved outdoor mounting adapter or enclosure is required. Consult with Avigilon for more information.

- Installation must be performed by qualified personnel only, and must conform to all local codes.
- This product is intended to be supplied by a UL Listed Power Unit marked “Class 2” or “LPS” or “Limited Power Source” with output rated 12 VDC or 24 VAC, 6 W min. or Power over Ethernet (PoE), rated 48 VDC, 6 W min.

- Any external power supply connected to this product may only be connected to another Avigilon product of the same model series. External power connections must be properly insulated.
- Do not connect directly to mains power for any reason.

Caution — Failure to observe the following instructions may result in injury or damage to the camera.

- Do not install near any heat sources such as radiators, heat registers, stoves, or other sources of heat.
- Do not subject the cables to excessive stress, heavy loads or pinching.
- Do not open or disassemble the device. There are no user serviceable parts.
- Refer all servicing to qualified personnel.
  Servicing may be required when the device has been damaged (such as from a liquid spill or fallen objects), has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Do not use strong or abrasive detergents when cleaning the device body.
- Use only accessories recommended by Avigilon.
- Use only UL-listed mounting bracket suitable for the mounting surface and minimum 0.7 kg (1.5 lb) weight.
- Use of controls or adjustments or performance of procedures other than those specified in this document may result in hazardous radiation exposure.

Regulatory Notices

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference.

Changes or modifications made to this equipment not expressly approved by Avigilon Corporation or parties authorized by Avigilon Corporation could void the user's authority to operate this equipment.

Disposal and Recycling Information

When this product has reached the end of its useful life, please dispose of it according to your local environmental laws and guidelines.

Risk of fire, explosion, and burns. Do not disassemble, crush, heat above 100 °C (212 °F), or incinerate.

European Union:

This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Other Notices

Compilation and Publication Notice

This manual has been compiled and published covering the latest product descriptions and specifications. The contents of this manual and the specifications of this product are subject to change without notice. Avigilon reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

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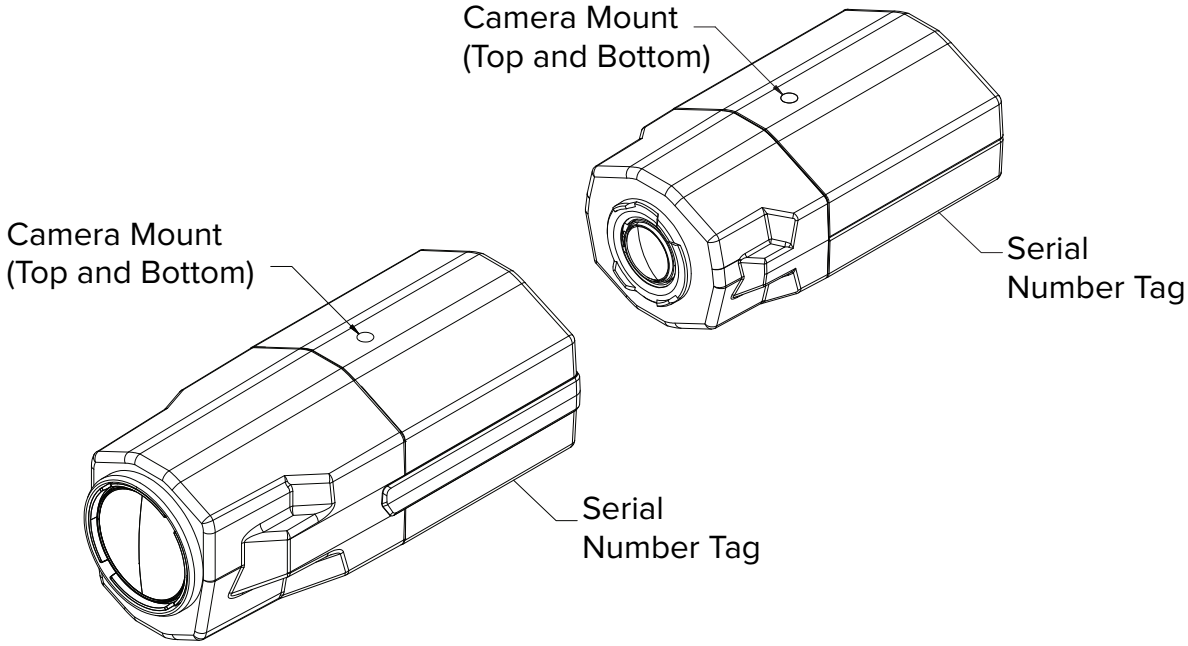
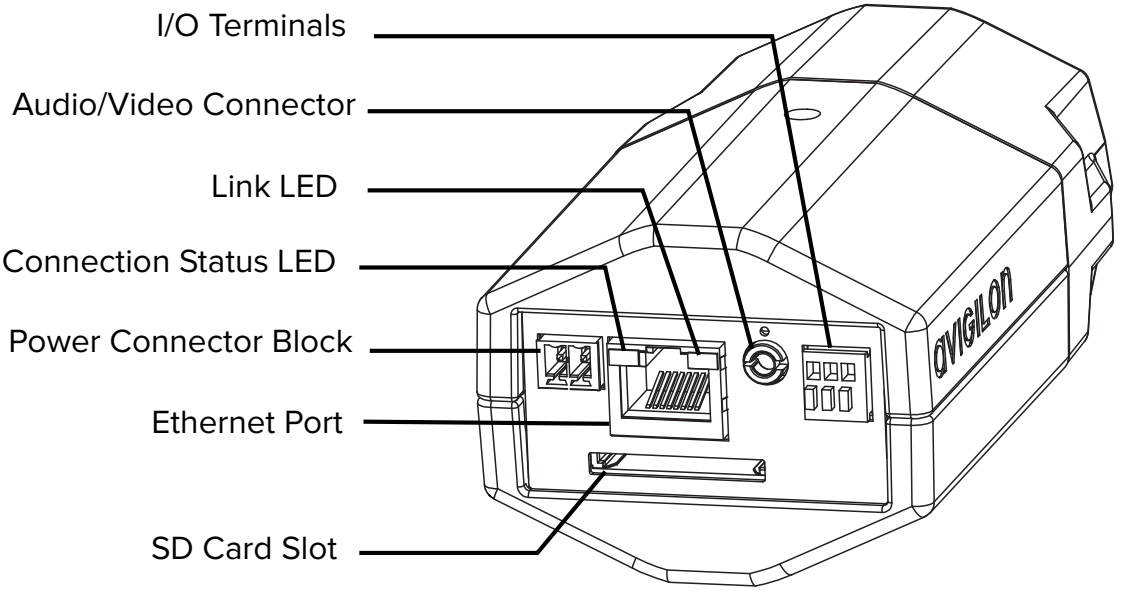
Overview

Front View



Feature	Description
Camera Mounts	Mounting points for the camera. Mounts accept ¼” - 20 UNC bolts commonly found on mounting brackets.
Serial Number Tag	Product serial number and part number label.

Rear View



Feature	Description
I/O Terminals	Provides connections to external input/output devices.
Audio/Video Connector	Accepts a mini-jack connector (3.5 mm). See the section about connecting microphones and monitors for more information.
Link LED	Indicates if there is an active connection in the Ethernet port.
Connection Status LED	Provides information about device operation. See *LED indicators* for more information.
Power Connector Block	Accepts a terminal block with either AC or DC power connection. DC input can be either polarity. Only required when Power over Ethernet is not available.
Ethernet Port	Accepts an Ethernet connection to a network. Server communication and image data transmission occurs over this connection. Also receives power when it is connected to a network that provides Power over Ethernet.
SD Card Slot	Accepts an SD card for onboard storage. See *(Optional) Configuring Onboard Storage* for more information.

Installation

Required Tools and Materials

- Small slotted screwdriver with 5/64” or 2 mm blade width — for connecting power when not using Power over Ethernet.
- Mounting bracket, enclosure or tripod.

Camera Package Contents

Ensure the package contains the following:

- Avigilon High Definition IP Camera
- Terminal block

Installation Steps

Complete the following procedures to install the camera.

1. *Mounting the Camera* on page 3
2. *Connecting Cables* on page 4
3. *Assigning an IP Address* on page 5
4. *Accessing the Live Video Stream* on page 5
5. *Aiming and Focusing the Camera* on page 5
6. *(Optional) Configuring Onboard Storage* on page 6

Mounting the Camera

Camera mounting points are provided on both the top and bottom of the camera body. Use these mounting points to mount the camera on a bracket, in an enclosure, or on a tripod. The mounting points have ¼”-20 UNC threaded holes which allow them to accept standard photographic mounting bolts.

Consult the installation instructions provided with the bracket, enclosure or tripod for detailed mounting instructions.

Warning — Use only UL-listed mounting bracket suitable for the mounting surface and minimum 0.7 kg (1.5 lb) weight.

Connecting Cables

Refer to the diagrams in the Overview section for the location of the different connectors.

To connect the cables required for proper operation, complete the following:

1. If there are external input or output devices that need to be connected to the camera (for example: door contacts, relays, etc), connect the devices to the camera I/O Terminals.
   For more information, see *Connecting to External Devices*.
2. If an external microphone or external video monitor needs to be connected to the camera, connect the devices to the camera Audio/Video Connector.
   For more information, see *Connecting to Microphones and Video Monitors*.
3. Connect a network cable to the camera's Ethernet Port (RJ-45 connector).
   - The Link LED will turn on once a network link has been established.
4. Connect power using one of the following methods:
   - Power over Ethernet (PoE) Class 3 — If PoE is available, the camera LEDs will turn on.
   - External Power — Connect an external 12 VDC or 24 VAC power source to the power connector block.
     For more information, see *Connecting Power*.
5. Check that the Connection Status LED indicates the correct state.
   For more information, see *LED Indicators*.

Assigning an IP Address

The camera automatically obtains an IP address by default. Once connected to a network, it attempts to locate and obtain an IP address from a DHCP server. If this fails, Zero Configuration Networking (Zeroconf) is used to choose an IP address. When the IP address is set using Zeroconf, the IP address is in the 169.254.0.0/16 subnet.

The IP address settings can be changed using one of the following methods:

- Avigilon Camera Installation Tool software application.
- Camera's web browser interface: http://*<camera IP address>*/
- ARP/Ping method. For more information, see *Setting the IP Address through the ARP/Ping Method*.
- Network Video Management software application (for example, Avigilon Control Center).

NOTE: The default camera username is *admin* and the default password is *admin*.

Accessing the Live Video Stream

Live video stream can be viewed using one of the following methods:

- Avigilon Camera Installation Tool software application.
- Camera's web browser interface: http://*<camera IP address>*/.
- Network Video Management software application (for example, Avigilon Control Center).

NOTE: The default camera username is *admin* and the default password is *admin*.

Aiming and Focusing the Camera

Use the Avigilon Camera Installation Tool or camera web browser interface to aim and focus the camera. Consult the software user guide for more information.

1. In the Image and Display settings dialog box, use the Zoom controls to achieve the desired zoom position for the camera.
2. In the Image and Display settings dialog box, use the **Auto Focus** button to focus the lens.

   If the desired focus position was not achieved, use the focus near and far buttons to adjust the focus.

Caution — Do not attempt to adjust the focus and zoom on the camera itself or the camera lens may become damaged.

(Optional) Configuring Onboard Storage

To use the camera's onboard storage feature, you must insert an SD card into the SD card slot. Avigilon offers a line of SD cards that have been fully tested with this camera to ensure optimal SD card performance. For ordering information, please refer to the Avigilon price list.

It is recommended that the SD card have a capacity of 8GB or more, and a write speed of class 6 or better. If the SD card does not meet the recommended capacity or write speed, the performance of the onboard storage may suffer and result in the loss of frames or footage.

1. Insert an SD card into the camera.

Caution — Do not force the SD card into the camera or you may damage the card and the camera. The SD card can only be inserted in the direction shown on the camera.

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2. Access the camera's web interface to enable the onboard storage feature.

   For more information, see the *Avigilon High Definition H.264 Camera Web Interface User Guide*.

For More Information

Additional information about setting up and using the device is available in the following guides:

- *Avigilon Camera Installation Tool User Guide*
- *Avigilon Control Center Client User Guide*
- *Avigilon High Definition H.264 Web Interface User Guide*

The manuals are available on the Avigilon website: http://avigilon.com/support-and-downloads.

Cable Connections

Connecting External Power

NOTE: Do not perform this procedure if Power over Ethernet (POE) is used.

If PoE is not available, the camera needs to be powered through the removable power connector block. Refer to the diagrams in this guide for the location of the power connector block.

The device can be powered from 12 VDC or 24 VAC. The power consumption information is listed in the product specifications.

To connect power to the power connector block, complete the following steps:

1. Remove the power connector block from the device.
2. Remove the insulation from ¼” (6 mm) of the power wires. Do not nick or damage the wires.
3. Insert the two power wires into the two terminals on the power connector block. The connection can be made with either polarity.
   Use a small slotted (5/64” or 2 mm blade width) screwdriver to loosen and tighten the terminals.
4. Attach the power connector block back into the receptacle on the device.

Warning — This product is intended to be supplied by a UL Listed Power Unit marked “Class 2” or “LPS” or “Limited Power Source” with output rated 12 VDC or 24 VAC, 6 W min. or PoE rated 48 VDC, 6 W min.

Connecting to External Devices

External devices are connected to the camera through the I/O terminal. The pinout for the I/O terminal is shown in the following table and diagram.

Table:External I/O Terminals

Pin	Function	Description
1	Ground	Ground
2	Input	To activate, connect the Input to the Ground pin. To deactivate, leave disconnected or apply between 3-15 V.
3	Output	When active, Output is internally connected with the Ground pin. Circuit is open when inactive. Maximum load is 25 VDC, 120 mA.

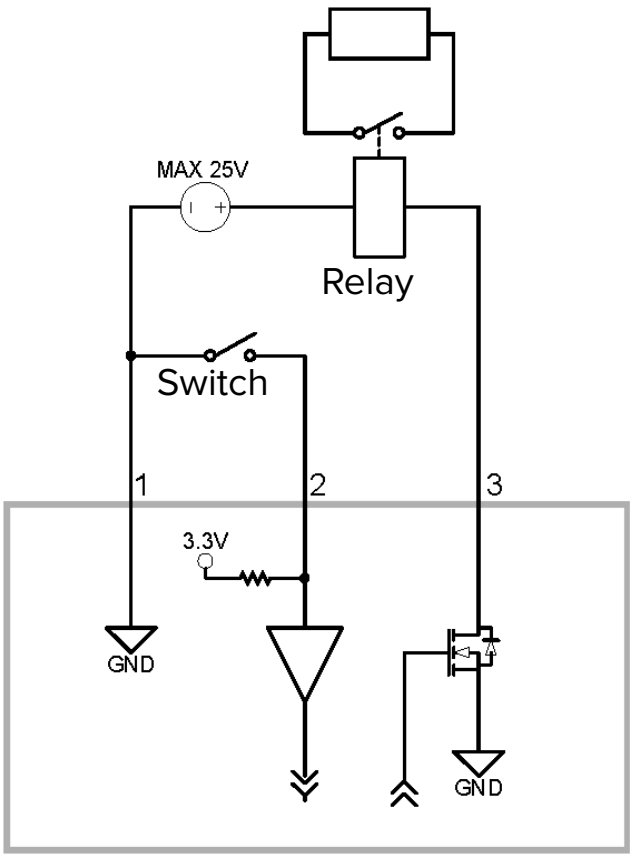

Figure: External I/O terminal schematics and example application.

Connecting to Microphones, Speakers and Video Monitors

The camera can be connected to an external microphone, speaker and video monitor through the audio/video connector. The connector is a mini-jack (3.5 mm), and the pinout for it is shown in the following diagram.

NOTE: The camera only supports line level mono audio input and an NTSC or PAL video output.

The video output signal is determined by the camera flicker control setting. When the camera flicker control is set to 60 Hz, the video output signal is NTSC. When the flicker control is set to 50 Hz, the video output signal is PAL. Use the Avigilon Camera Installation Tool to configure the camera's flicker control in the Image and Display setup.

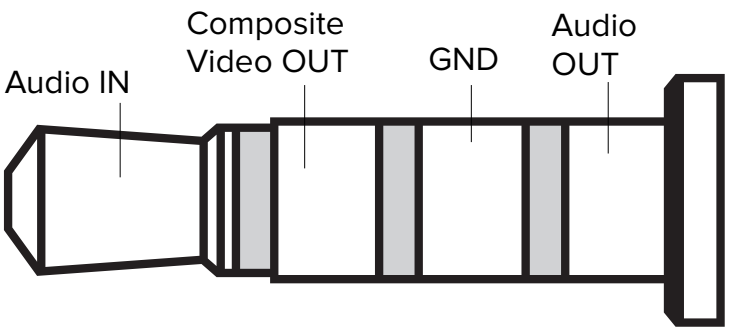

Figure: Mini-jack audio video connector.

LED Indicators

Once the camera is connected to the network, the Connection Status LED will display the camera's progress in connecting to the Network Video Management software.

The following table describes what the LEDs indicate:

Table:LED Indicators

Connection State	Connection Status LED	Description
Obtaining IP Address	One short flash every second	Attempting to obtain an IP address.
Discoverable	Two short flashes every second	Obtained an IP address but is not connected to the Network Video Management software.
Upgrading Firmware	Two short flashes and one long flash every second	Updating the firmware.
Connected	On	Connected to the Network Video Management software.

Reset to Factory Default Settings

If the camera no longer functions as expected, you can choose to restore the camera to its factory default settings.

Use the firmware revert button to reset the camera.

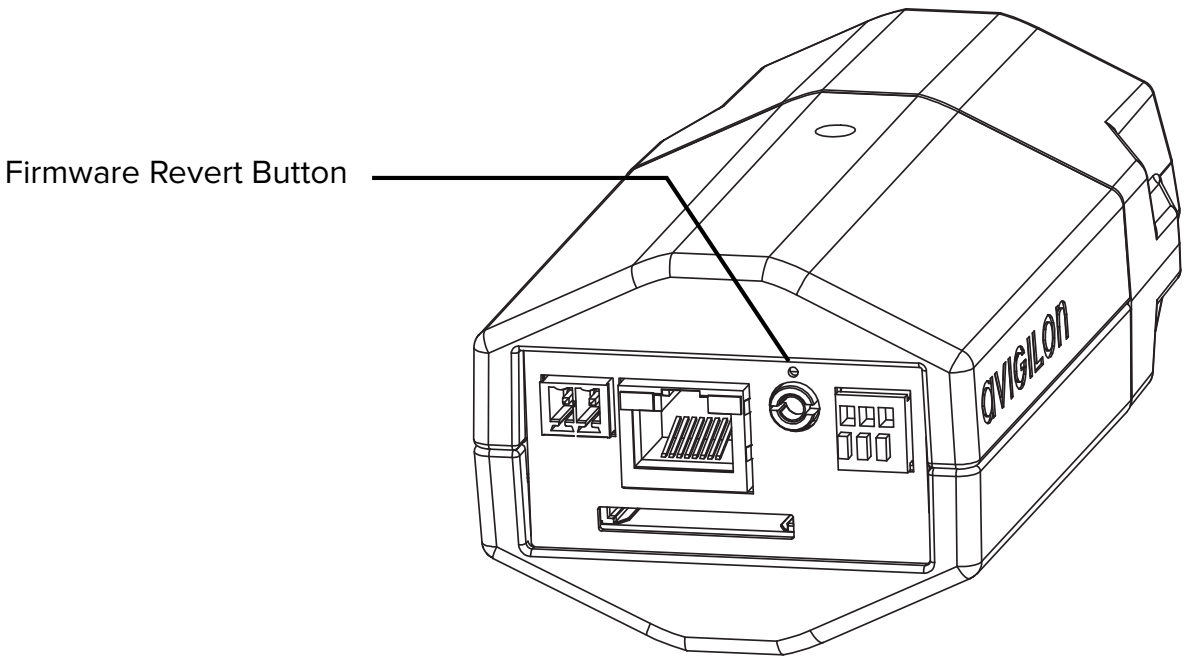

Figure: The firmware revert microswitch on the rear of the camera.

1. Disconnect power from the camera.
2. Using a straightened paperclip or similar tool, gently press and hold the firmware revert button.
3. While continuing to hold the button, power the device. Release the button after three seconds.

Caution — Do not apply excessive force. Inserting the tool too far will damage the device.

Setting the IP Address Through the ARP/Ping Method

Complete the following steps to configure the camera to use a specific IP address:

1. Locate and copy down the MAC Address (MAC) listed on the Serial Number Tag for reference.
2. Open a Command Prompt window and enter the following commands:
   a. `arp -s <New Camera IP Address> <Camera MAC Address>`
      For example: `arp -s 192.168.1.10 00-18-85-12-45-78`

   b. `ping -l 123 -t <New Camera IP Address>`
      For example: `ping -l 123 -t 192.168.1.10`
3. Reboot the camera.
4. Close the Command Prompt window when you see the following message:
   `Reply from <New Camera IP Address>: ...`

Specifications

	H3-B1	H3-B2	H3-B3
Camera			
Audio Input	Line input, A/V mini-jack (3.5 mm)		
Video Output	NTSC/PAL, A/V mini-jack (3.5 mm)		
Lens	4.7-84.6mm, F1.6, auto iris	3-9mm, F1.2, P-Iris	9-22mm, F1.6, P-Iris
Onboard Storage	SD/SDHC/SDXC slot – minimum class 4; class 6 or better recommended		
Network			
Network	100Base-TX		
Cabling Type	CAT5		
Connector	RJ-45		
API	ONVIF compliance version 1.02, 2.00, Profile S (www.onvif.org)		
Security	Password protection, HTTPS encryption, digest authentication, WS authentication, user access log		
Protocols	IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMP, ICMP, DHCP, Zeroconf, ARP		
Streaming Protocols	RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP,RTP/RTSP/HTTPS/TCP, HTTP		
Mechanical			
Dimensions L x W x H	156 mm x 69 mm x 64 mm 6.1” x 2.7” x 2.5”	115 mm x 67 mm x 53 mm 4.5” x 2.6” x 2.5”	
Weight	0.56 kg (1.2 lbs)	0.47 kg (1.0 lbs)	
Camera Mount	¼” UNC-20 (top and bottom)		
Electrical			
Power Consumption	6 W 4.5 W for LightCatcher model		
Power Source	VDC: 12 V VAC: 24 V PoE: IEEE802.3af Class 3 compliant		
Power Connector	2-pin terminal block		
Environmental			
Operating Temperature	-10 °C to +50 °C (14 °F to 122 °F)		
Storage Temperature	-10 °C to +70 °C (14 °F to 158 °F)		
Certifications0			
Safety	UL 60950 CE	CSA 60950 ROHS	EN 60950-1 WEEE
Electromagnetic Emissions	FCC Part 15 Subpart B Class B EN 55022 Class B		IC ICES-003 Class B
Electromagnetic Immunity	EN 55024 EN 61000-4-4	EN 61000-4-2 EN 61000-4-5	EN 61000-4-3 EN 61000-4-6	 EN 61000-4-11

Limited Warranty & Technical Support

Avigilon warrants to the original consumer purchaser, that this product will be free of defects in material and workmanship for a period of 3 years from date of purchase.

The manufacturer's liability hereunder is limited to replacement of the product, repair of the product or replacement of the product with repaired product at the discretion of the manufacturer. This warranty is void if the product has been damaged by accident, unreasonable use, neglect, tampering or other causes not arising from defects in material or workmanship. This warranty extends to the original consumer purchaser of the product only.

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This Limited Warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.

Warranty service and technical support can be obtained by contacting Avigilon Technical Support by phone at 1.888.281.5182 or via email at support@Avigilon.com.